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[54] **ADAPTIVE VARIABLE-LENGTH CODING AND DECODING METHODS FOR IMAGE DATA**

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[56] **References Cited**

U.S. PATENT DOCUMENTS

5,329,318	7/1994	Keith	348/699
5,377,051	12/1994	Lane et al.	360/33.1

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[57] **ABSTRACT**

An adaptive variable-length coding/decoding method performs an optimal variable-length coding and decoding depending on an intra mode/inter mode condition, quantization step size and a current zigzag scanning position, such that a plurality of variable-length coding tables having different patterns of a regular region and an escape region according to statistical characteristics of the run level data are set. One of the variable-length coding tables is selected according to mode, quantization step size and scanning position, and the orthogonal transform coefficients according to the selected variable-length coding table are variable-length-coded.

7 Claims, 7 Drawing Sheets